CLAIMS

1. Actuating system of the type comprising an electric motor (1) controlled by a computer (2) that is designed to regulate the current supplied to the motor (1) as a function of a position setpoint of the member that is to be actuated, said system comprising a device for transmitting the movement of the motor (1) to the member, said system being characterized in that the transmission device comprises an encoder (3) that is dependent on the movement of the motor (1), said encoder comprising a main multipolar track, and in that the system comprises:

- a fixed sensor (4) comprising at least two sensitive elements that are arranged facing and at an air-gap distance from the main track, said sensor being designed to deliver two square digital position signals (A, B) in quadrature which are representative of the position of the encoder (3);

- a device (5) for processing the signals (A, B), which device comprises counting means for determining, from an initial position, the actual position of the encoder (3);

- a device (6) for comparing the actual position of the encoder (3) with the position of the encoder (3) that corresponds in theory to the applied setpoint.

2. System according to Claim 1, characterized in that:

- the encoder (3) furthermore comprises a singularity that is indexed to a reference position of the encoder (3);

- the sensor (4) furthermore comprises at least one sensitive element designed to detect said singularity;

- the processing device (5) comprises means which, upon detection of the singularity, can assign the reference position as initial position.

3. System according to Claim 2, characterized in that the encoder (3) furthermore comprises a multipolar track that is referred to as the "top tour" track, said track being provided with the singularity, at least one sensitive element being arranged facing and at an air-gap distance from said "top tour" track so as to deliver a digital signal (C) that comprises a pulse.

4. System according to Claim 3, characterized in that each multipolar track is formed of a magnetic ring on which there are magnetized north and south poles equally distributed with a constant angular width, the magnetic singularity of the "top tour" track being formed of two adjacent poles the magnetic transition of which is different from the others.

5. System according to any one of Claims 1 to 4, characterized in that the sensitive elements are chosen from the group comprising Hall probes, magnetoresistors and giant magnetoresistors.

6. System according to any one of Claims 1 to 5, characterized in that the transmission device comprises the rotor (7) of the motor (1), on which the encoder (3) is mounted.

7. System according to any one of Claims 1 to 5, characterized in that the transmission device comprises a reducer (8) on a rotor (9) of which the encoder (3) is mounted.

8. System according to any one of Claims 1 to 5, characterized in that the transmission device comprises a rotor (7) provided with a pinion (11) and a part (12)

provided with a rack (13), which are designed to transform the rotary movement of the rotor (7) into a linear movement of the part (12), the encoder (3) being associated with said part.

9. System according to any one of Claims 1 to 8, characterized in that the transmission device comprises a stop that is designed to interrupt the movement of the motor (1) in a reference position of the encoder (3), and in that the processing device (5) comprises means which, upon interruption of the movement, can assign the reference position as initial position.

10. System according to any one of Claims 1 to 9, characterized in that the comparison device (6) comprises alert means which, upon determination of a significant difference between the actual position and the theoretical position, are designed to emit a signal indicating an anomaly in the operation of the actuating system.

11. System according to any one of Claims 1 to 10, characterized in that the comparison device (6) comprises an actuation feedback loop, which is controlled as a function of the determined difference between the actual position and the theoretical position.

12. Method of actuating a member using a system according to Claim 10, characterized in that it comprises the provident iterative steps of:

- applying to the computer (2) a position setpoint of the member;

- determining the actual position of the encoder (3);

- comparing the actual position of the encoder (3) with the position of the encoder (3) that corresponds in theory to the applied setpoint;

- if the difference between the actual position and the theoretical position is greater than a threshold, activating the alert means.

13. Method of actuating a member using a system according to Claim 11, characterized in that it comprises the provident iterative steps of:

- applying to the computer (2) a position setpoint of the member;

- determining the actual position of the encoder (3);

- comparing the actual position of the encoder (3) with the position of the encoder (3) that corresponds in theory to the applied setpoint;

- if the difference between the actual position and the theoretical position is greater than a threshold, controlling the feedback loop so as to apply to the computer (2) a position setpoint that is slaved to the difference.

14. Method according to Claim 12 or 13 when it depends on Claim 2 or 9, characterized in that it comprises a prior procedure of determining the initial position of the encoder (3), in which the motor (1) is supplied with current so as to position the encoder (3) in its reference position, said reference position being assigned in the processing device (5) as initial position.

15. Use of a system according to any one of Claims 1 to 11 for actuating a device for metering fuel in a heat engine.